



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

November 18, 2014

Mr. Kevin Davison
Site Vice President
Prairie Island Nuclear Generating Plant
Northern States Power Company, Minnesota
1717 Wakonade Drive East
Welch, MN 55089

**SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT 2, NRC
SUPPLEMENTAL INSPECTION REPORT 05000306/2014009 AND
ASSESSMENT FOLLOW-UP LETTER**

Dear Mr. Davison:

On October 7, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Prairie Island Nuclear Generating Plant, Unit 2. The enclosed report documents the results of this inspection, which were discussed on October 7, 2014, with you and other members of your staff.

As required by the NRC Reactor Oversight Process (ROP) Action Matrix, this supplemental inspection was performed in accordance with Inspection Procedure 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area." The purpose of the inspection was to examine the causes for, and actions taken related to, the Unit 2 Mitigating Systems Performance Index—Emergency Alternating Current (A/C) Power performance indicator (PI) transitioning from green to white during the fourth quarter of 2012. By letter dated February 25, 2013, the NRC informed you that performance at your Prairie Island Nuclear Generating Plant, Unit 2 had also transitioned to the Regulatory Response Column of the ROP Action Matrix due to the PI color change. You notified the NRC of your readiness for this inspection on April 24, 2014.

This supplemental inspection was conducted to provide assurance that the root causes and contributing causes of the events resulting in the White PI were understood, to independently assess the extent of condition and extent of cause, and to provide assurance that the corrective actions for the risk-significant performance issues were adequate.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records and interviewed plant personnel.

The NRC determined that the nine causal evaluations completed in preparation for this inspection were conducted to a level of detail commensurate with the significance of the problems and reached reasonable conclusions as to the root and contributing causes of the events. The NRC also concluded that you identified reasonable and appropriate corrective

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actions for each root and contributing cause; the corrective actions appeared to be prioritized commensurate with the safety significance of the issues.

The Emergency AC Power PI returned below the Green-to-White threshold in the second quarter of 2013. In accordance with the guidance in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," Unit 2 was required to remain in the Regulatory Response Column of the ROP Action Matrix until all objectives of the supplemental inspection had been met. Therefore, based upon the results of this inspection, the NRC has determined the performance at the Prairie Island Nuclear Generating Plant, Unit 2 to be in the Licensee Response Column of the ROP Action Matrix as of the date of this letter.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/readingrm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Docket No. 50-306
License No. DPR-60

Enclosure:
Inspection Report 05000306/2014009
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-306;
License No: DPR-60;

Report No: 05000306/2014009

Licensee: Northern States Power Company, Minnesota

Facility: Prairie Island Nuclear Generating Plant, Unit 2

Location: Welch, MN

Dates: August 25 through October 2, 2014

Inspectors: K. Stoedter, Senior Resident Inspector, Prairie Island
P. LaFlamme, Resident Inspector, Prairie Island

Approved by: K. Riemer, Chief
Branch 2
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

Inspection Report (IR) 05000306/2014009; 08/25/2014–10/02/2014; Prairie Island Nuclear Generating Plant, Unit 2; Supplemental Inspection–Inspection Procedure (IP) 95001.

The NRC resident inspectors from the Prairie Island Nuclear Generating Plant performed this inspection. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG–1649, "Reactor Oversight Process."

Cornerstone: Mitigating Systems

As required by the NRC ROP Action Matrix, this supplemental inspection was performed in accordance with IP 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area." The purpose of the inspection was to examine the causes for, and actions taken related to, the Unit 2 Mitigating Systems Performance Index–Emergency A/C Power PI transitioning from green to white during the fourth quarter of 2012.

The licensee performed several causal evaluations to address the technical issues and programmatic weakness that resulted in the White PI. The inspectors determined that the licensee's causal evaluations were conducted to a level of detail commensurate with the significance of the problem and reached reasonable conclusions as to the root and contributing causes of the event. The inspectors also concluded that the licensee identified reasonable and appropriate corrective actions for each root and contributing cause; the corrective actions appeared to be prioritized commensurate with the safety significance of the issues.

The licensee determined that two root causes existed. The first root cause was technical in nature in that the licensee's efforts to identify and mitigate or eliminate vulnerabilities on the Unit 2 emergency diesel generators (EDGs) were not effective in reducing the number of EDG failures. The second root cause was programmatic in nature in that the performance indicator program had not been appropriately managed and reinforced commensurate with its regulatory significance. The contributing cause was determined to be that licensee management had not enforced standards to require conditions be thoroughly analyzed and actions taken commensurate with the risk. Corrective actions for the root causes included replacing the individual components which resulted in each of the EDG failures, revising the Mitigating Systems Performance Indicator (MSPI) and PI program documents to include clear ownership of the PI program, and training data stewards and reviewers to improve the PI review and validation process to preclude data submittal errors.

The Emergency A/C Power System PI returned below the Green-to-White threshold in the second quarter of 2013. In accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program," Unit 2 was required to remain in the Regulatory Response Column of the ROP Action Matrix until all objectives of the supplemental inspection had been met. Therefore, based upon the results of this inspection, the NRC has determined the performance at Prairie Island Nuclear Generating Plant Unit 2, to be in the Licensee Response Column of the ROP Action Matrix as of the date of this letter.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA4 Supplemental Inspection (95001)

.1 Inspection Scope

This inspection was conducted in accordance with IP 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area," to assess the licensee's evaluation of one White PI in the Mitigating Systems Cornerstone. The PI was the Emergency A/C Power System PI. This PI exceeded the Green-to-White threshold as reported in the licensee's revised fourth quarter 2012 PI data submittal dated February 18, 2013.

The inspection objectives were to:

- provide assurance that the root causes and contributing causes of risk-significant performance issues are understood;
- provide assurance that the extent of condition and extent of cause of risk-significant issues are identified; and
- provide assurance that licensee corrective actions to risk-significant performance issues are sufficient to address the root causes and contributing causes, and to prevent recurrence.

The three EDG failures that caused the PI to exceed the Green-to-White threshold are briefly described below:

- Event 1: D5 Emergency Diesel Generator Relay Trip at 2500 Kilo-Watts

On February 8, 2010, while performing SP 2093, "D5 Diesel Generator Monthly Slow Start Test," a relay failed causing the D5 EDG to trip and be declared inoperable. The licensee determined the apparent cause was early failure of an associated relay. For corrective action, the licensee replaced the failed D5 relay, tested the D6 EDG to preclude a common cause failure and established a relay preventative maintenance activity to prevent recurrence.

- Event 2: D6 Emergency Diesel Generator Spurious Over-speed Trip

On August 22, 2011, while performing SP 2095, "D6 Diesel Generator Monthly Slow Start Test," the D6 EDG tripped on a spurious over-speed signal caused by an intermittent short in an over-speed signal cable. During troubleshooting, a visual examination of the associated cable found that the cable had partially pulled out of its connector located on top of the over-speed detector switch. The licensee determined the apparent cause to be that the radius of the cable bend was such that it placed additional strain on the cable and caused it to separate from the connector. For corrective action, the licensee replaced the cable that failed, developed design criteria for cable entry geometric orientation limits for straight and 90 degree connections to minimize cable strain, established a preventative maintenance frequency to inspect

cable connectors on a 2-year frequency and revised the associated design procedure to incorporate the allowable bend radius limits to preclude cable degradation.

- Event 3: D6 EDG Radiator Fan Motor Overload Relay Trip

On December 17, 2012, while performing SP 2305, "D6 Diesel Generator Monthly Slow Speed Start Test," the D6 engine 1, radiator fan #2 motor tripped due to motor overload relay (MOLR) actuation. This resulted in D6 being declared inoperable. The licensee determined the apparent cause was inadequate MOLR sizing in that actual fan motor running current was too close to the installed MOLR over-current trip setpoint. For corrective actions, the licensee replaced all associated MOLRs on the D5 and D6 EDG radiator fans with MOLRs that had a higher current rating to preclude additional trips.

The licensee completed an equipment cause evaluation (ECE) for each of the EDG failures. The inspectors included these cause evaluations in their overall review of the White PI.

By letter dated April 24, 2014, the licensee notified the NRC that applicable corrective actions to address the White PI had either been completed or initiated, and that licensee was ready for the NRC to conduct this supplemental inspection. In preparation for the inspection, the licensee performed a root cause evaluation (RCE) documented in corrective action program (CAP) 1369056, "MSPI Change from Green-to-White," to address the White PI. The licensee performed an additional RCE as documented in CAP 1369064, "NRC Performance Indicator Date Submitted without MSPI Failure," to address the failure to accurately report PI data to the NRC.

The inspectors reviewed corrective actions that were taken or planned to address the identified causes. The inspectors also held discussions with licensee personnel to ensure that the root and contributing causes and the contribution of safety culture components were understood. The inspectors also ensured that corrective actions taken or planned were appropriate to address the causes and preclude repetition.

.2 Evaluation of Inspection Requirements

02.01 Problem Identification

- a. *Determine whether the evaluation identified who (i.e., licensee, self-revealing, or NRC), and under what conditions the issue was identified.*

The inspectors determined that the causal evaluations adequately identified when the Emergency AC Power System PI exceeded the Green-to-White threshold. Each of the EDG failures described above was the result of a self-revealed event. The licensee's causal evaluation correctly documented that the PI had changed from green to white with the third EDG failure on December 17, 2012.

- b. *Determine whether the evaluation documented how long the issue existed and, whether there were any prior opportunities for identification.*

The Emergency AC Power System PI exceeded the Green-to-White threshold as reported in the licensee's revised fourth quarter 2012 PI submittal. The licensee's evaluation correctly documented that this occurred with the third EDG failure on December 17, 2012. As discussed in the licensee's evaluation, each of the EDG failures was sufficiently unique, such that there was no prior opportunity for identification and actions to preclude the PI exceeding the Green-to-White threshold.

- c. *Determine whether the licensee's root cause evaluation documented the plant specific risk consequences and compliance concerns associated with the issue.*

As noted in the licensee's evaluation, the White PI represented performance outside an expected range of nominal utility performance, thus indicating an increased risk of core damage during an event. The inspectors determined that nuclear safety significance and risk were appropriately discussed in the licensee's evaluation for the White PI. Nuclear safety and risk significance were also adequately evaluated in the separate root and ECEs performed for each of the EDG failures.

The licensee determined the actual consequence from each of the events resulted in the specific diesel generator being inoperable, each EDG failure was considered an MSPI failure and each of the individual conditions was corrected. Additionally, the licensee determined that off-site power and defense in-depth were available by the other D5/D6 EDG train during each of the events. The inspectors noted that the licensee also included potential consequences from another EDG failure as part of their evaluations.

Findings

No findings were identified.

02.02 Root Cause, Extent of Condition, and Extent of Cause Evaluation

- a. *Determine whether the licensee's root cause evaluation applied systematic methods in evaluating the issue in order to identify root causes and contributing causes.*

The inspectors determined that the primary RCE adequately applied systematic methods in evaluating the issue. The licensee used an Event and Causal Factors Chart, Barrier Analysis, Change Analysis, and Management Oversight Risk Tree (MORT) Analysis within their RCEs.

- b. *Determine whether the licensee's root cause evaluation was conducted to a level of detail commensurate with the significance of the problem.*

The inspectors determined that the RCEs were conducted to a level of detail commensurate with the significance of the problem. The licensee's evaluations reviewed the EDG failures that contributed to the White PI and the programmatic issues which led to the failure to properly report PIs during the fourth quarter of 2012.

The licensee identified a technical root cause, a programmatic root cause and an associated contributing cause as part of their analyses.

Root Cause Number 1:

The licensee's efforts to identify and mitigate or eliminate loss of offsite power vulnerabilities on the Unit 2 EDGs had not been effective.

Supporting Data:

- Conservatism was identified but equipment reliability improvements had not been implemented;
- Additional action was required to identify unknown vulnerabilities; and
- There was a lack of action to employ the MSPI margin recovery plan and to facilitate an update to the probabilistic risk assessment (PRA) model to regain margin.

Root Cause Number 2:

The PI program had not been appropriately managed and reinforced commensurate with its regulatory significance.

Supporting Data:

- MSPI information had not been presented regularly to site management;
- Adequate steps were not taken to improve PRA/MSPI margin; changes to the PRA lingered and were not aggressively pursued until the PI color change occurred;
- MSPI Review Board quorum was only engineering, not multidiscipline;
- MSPI Review Board only met to review failure determinations;
- MSPI Review Board was not reviewing MSPI margin;
- Conflict existed between the MSPI Review Board and Margin Review Board procedures for low margin issues thus no low margin recovery plans were prepared and tracked for implementation.

Contributing Cause:

Licensee management had not enforced standards to require conditions be thoroughly analyzed and actions taken commensurate with the risk.

Supporting Data:

- Conditions were not thoroughly supported or refuted in Event 1;
- Repeat events occurred with Event 2 and Event 3;
- Troubleshooting had not initially determined a cause in Event 3;
- Non-conforming conditions were not evaluated in Event 3;
- Quality reviews for troubleshooting and causal evaluations had not prevented inadequate products and ineffective corrective actions;
- Engineering personnel did not understand what information needed to be evaluated, completed, and approved for MSPI submittal and that there were required submittal due dates;
- Individuals involved with pieces of the MSPI submittal process were unaware of key roles played by others; and

- Engineering leadership/management turnover, open positions, and resources contributed to limited accountability, evaluation opportunities, approval, and verification of data.
- c. *Determine whether the licensee's root cause evaluation included consideration of prior occurrences of the problem and knowledge of prior operating experience (OE)*

The inspectors determined that the RCEs adequately included consideration of prior occurrences of the problem and knowledge of prior operating experience. The licensee identified both internal and external operating experience items that addressed EDG failures and impacts on MSPI data reporting.

The licensee determined with respect to internal OE, that the MSPI failures involved an entirely different set of components and therefore would not be applicable in determining corrective actions. However, the licensee determined in their external OE review that although Prairie Island Nuclear Generating Plant (PINGP) already had a MSPI review board, it had not been effective at reviewing and managing MSPI margin. The inspectors noted this issue was addressed by the actions to correct the root causes. In addition, the licensee identified it did not have a trigger in the corrective action program to initiate a CAP when MSPI margin had decreased by 50 percent. The inspectors noted this issue was addressed by the actions to correct the root causes.

- d. *Determine whether the licensee's root cause evaluation addressed extent of condition and extent of cause of the problem.*

The inspectors determined that the RCEs adequately addressed the extent of condition and extent of cause of the problem. The evaluations adequately reviewed the extent of issues associated with each root and contributing cause identified. Corrective actions were appropriate for the identified extent of cause and condition reviews.

In the root cause analyses, the licensee addressed the extent of condition by defining the condition as a failure to recognize a decline in EDG reliability and resultant lack of action taken to increase reliability prior to exceeding the White PI threshold. The scope for the extent of condition was initially limited to MSPI systems and was then expanded to the entire PI program. The licensee noted that prior to the indicator turning White there was no requirement to have a recovery plan for PI systems approaching a color change threshold. In response, the licensee created procedure, FP-E-MSPI-01, "Mitigating System Performance Index (MSPI)," which now addresses a recovery plan for systems approaching color change thresholds. The licensee concluded this will minimize the chance of another MSPI indicator turning White.

The licensee addressed extent of cause by looking at the extent of the root causes, which was that efforts to identify and mitigate or eliminate vulnerabilities on the Unit 2 EDGs that challenge reliability during a loss of offsite power had not been effective and the performance indicator program had not been appropriately managed and reinforced commensurate with its regulatory significance. The licensee concluded that problems with the reliability of equipment important to safety and with program implementation were seen throughout the organization. The licensee addressed this issue in CAP 1390609. Since no additional color changes from Green to White have occurred since December 17, 2012, the inspectors determined that the extent of condition and extent of cause have been adequately addressed.

- e. *Determine whether the licensee's root cause evaluation, extent of condition and extent of cause appropriately considered the safety culture components as described in IMC 0310.*

The inspectors determined that, in general, the root cause, extent of condition, and extent of cause evaluations appropriately considered the safety culture components as described in IMC 0310.

The inspectors reviewed the causal evaluations addressing each individual EDG failure, change from Green to White PI and accuracy of data submittal to the NRC and validated the licensee had systematically considered each of the safety culture components. In each of their causal evaluations, the licensee identified weaknesses in several of the safety culture components. The inspectors noted that the identified weaknesses were aligned with the root and contributing causes. The inspectors' review of the event did not identify other potential weaknesses in safety culture components.

Findings

No findings were identified.

02.03 Corrective Actions

- a. *Determine whether the licensee specified appropriate corrective actions for each root/contributing cause or that the licensee evaluated why no actions were necessary.*

The inspectors reviewed each root, apparent and ECEs and the associated corrective actions. The corrective actions were adequately described and were entered into the licensee's corrective action program tracking system. The inspectors determined that the corrective actions appropriately addressed the root causes and contributing cause of the events and if properly implemented would address the problems identified within each of the root, apparent and ECEs. Two concerns were noted:

- 1) With regard to the Event 2 associated with the D6 spurious over-speed trip in August 2011, the inspectors identified some weaknesses which demonstrated a lack of rigor and attention to detail with documentation. Specifically, after an independent walk down of D6 to validate corrective actions had been implemented as specified, the inspectors identified that 2 of the 8 over-speed trip signal cables were not installed per the approved design procedure. In response, the licensee contacted the cable vendor to acquire additional clarification on minimum bend radii requirements. The inspectors also noted that the work order provided insufficient task instruction detailing inspection requirements in that interviews during the first week of the inspection had to be performed to determine the 'intrusiveness' of actual inspections performed by the licensee. Lastly, the inspectors noted that engineering input had not been obtained by the planner for the original work order to adequately specify inspection requirements. However, since subsequent discussion with vendor revealed current bend radii cable configuration met design and the above weaknesses have been entered into the licensee's CAP this concern was considered resolved.

- 2) With regard to the Event 3 associated with the D6 MOLR trip that occurred in December 2012, the inspectors identified some weaknesses which demonstrated a lack of rigor, attention to detail and timeliness of evaluation, and resolution within the CAP when performing current and past operability evaluations. Specifically, the inspectors identified during the first week of the inspection that engineering had only considered a 3 year look back from December 17, 2012 in assessing past operability impact. The inspectors noted that the 3 year look back should have begun when Operability Recommendation (OPR) 1392583 had been completed in August of 2013 in assessing reportability requirements and operability and again when the OPR was revised in September 2013 as new information became available.

The inspectors noted that since the licensee needed to evaluate past operability and its effect on MSPI and Safety System Functional Failure (SSFF) PI reportability, the inspectors had to postpone completion of the 95001 inspection until the first week of October 2014 to complete their review. In response, the licensee performed an apparent cause evaluation to evaluate operability and subsequent impact on MSPI and SSFF reportability. With regard to this concern, the inspectors identified the following weaknesses:

- a. The licensee's original past operability review lacked rigor in that it only looked at actual EDG runs with nominal bus voltages supplying the safety-related radiator cooling fans over past 3 years and did not incorporate degraded voltages or sufficient detail justifying spurious trip as the cause of failure;
- b. The 8 month process to generate an adequate OPR was untimely; and
- c. The licensee's procedure, FP-OP-OL-01, "Operability/ Functionality Determination," does not link the MSPI program into process for reporting unreliability if a past operability evaluation results in a component being declared inoperable at point of discovery anytime during the 3 year look back as required by Nuclear Energy Institute (NEI) Document 99-02.

In summary, the inspectors determined that because the above concern and associated weakness did not result in additional PI data submittal errors, change in PI color or additional inoperability periods and have been entered in the licensee's corrective action program, this concern was considered resolved.

- b. *Determine whether the licensee prioritized the corrective actions with consideration of the risk significance and regulatory compliance.*

The inspectors determined that the licensee adequately prioritized the corrective actions with consideration of the risk significance and regulatory compliance. The inspectors reviewed the prioritization of the corrective actions and verified that, within reason, actions of a generally higher priority were scheduled for completion ahead of those of a lower priority. Specifically, with regard to the technical root cause that addressed EDG vulnerabilities that challenge reliability during a loss of offsite power, the licensee has replaced all components that resulted in each EDG failure and subsequent transition from Green to White in the PI program. With regard to the programmatic root cause detailing that the PI program has not been appropriately managed and reinforced

commensurate with its regulatory significance, the licensee completed revising the MSPI and overall PI guidance and program documents to include clear ownership of the PI program. The licensee also implemented additional training for data stewards and reviewers to improve the review and validation process to preclude PI data submittal errors. Additionally, in response to the inspectors noted weaknesses detailed above, the licensee planned to revise their operability/functionality procedure to link PI reporting criteria per NEI 99-02 and is currently evaluating the untimeliness of operable evaluations, documentation detail inadequacies and lack of rigor in the engineering review when addressing past operability reviews. In summary, the inspectors determined that the prioritization of corrective actions was appropriate.

- c. *Determine whether the licensee established a schedule for implementing and completing the corrective actions.*

The inspectors determined that the licensee adequately established a schedule for implementing and completing the corrective actions. The schedule was tracked in the corrective action program data base. As discussed above, some corrective actions have not yet been completed. The remaining corrective actions have been scheduled along with effectiveness reviews. The inspectors concluded the timeline for completion of corrective actions was appropriate.

- d. *Determine whether the licensee developed quantitative or qualitative measures of success for determining effectiveness of the corrective actions to prevent recurrence.*

The inspectors determined that the licensee adequately developed quantitative or qualitative measures of success for determining effectiveness of the corrective actions to prevent recurrence. The inspectors concluded the effectiveness reviews were appropriate.

- e. *Determine that the corrective actions planned or taken adequately address the Notice of Violation that was the basis for the supplemental inspection.*

The NRC staff did not issue a Notice of Violation to the licensee; therefore, this inspection item was not applicable.

Findings

No findings were identified.

02.06 Evaluation Of Inspection Manual Chapter 0305 Criteria For Treatment Of Old Design Issues

The licensee did not request credit for self-identification of an old design issue; therefore, this inspection item was not applicable.

4OA6 Exit Meeting

Exit Meeting Summary

The inspectors presented the inspection results to Mr. Kevin Davison and other members of licensee management on October 7, 2014. The inspectors confirmed that proprietary information was not provided or examined during this inspection.

Regulatory Performance Meeting

On October 7, 2014, the NRC met with the licensee to discuss its performance in accordance with IMC 0305, Section 10.02.b.4. During this meeting, the NRC and licensee discussed the issues related to the White PI that resulted in Prairie Island Nuclear Generating Plant, Unit 2, being placed in the Regulatory Response Column of the NRC's ROP Action Matrix. This discussion included the causes, corrective actions, extent of condition, extent of cause, and other planned licensee actions.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

K. Davison, Site Vice President
S. Sharp, Site Director
J. Hallenbeck, Site Engineering Director
C. Younie, Site Operations Director, Plant Manager
T. Allen, Assistant Plant Manager
J. Anderson, Regulatory Affairs Manager
J. Ruttar, Operations Manager

Nuclear Regulatory Commission

K. Riemer, Chief, Division of Reactor Projects
K. Stoedter, Senior Resident Inspector
P. LaFlamme, Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None.

Closed

None.

Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

IP 95001

- CAP 1369056 (RCE), MSPI Change from Green to White, Revision 2
- CAP 1369064 (RCE), NRC Performance Indicator Data Submitted Without MSPI Failure, April 16, 2013
- CAP 1416664 (RCE), RCS Specific Activity Misreporting of PI for 2013, January 29, 2014
- CAP 1444959 (ACE), WO Task Instruction Inadequate for Execution, August 29, 2014
- CAP 1444756 (ACE), OPR 1392583 Revision 1 Failed to Address Potential Inoperability, August 28, 2014
- CAP 1443059 (ACE), Unit 1 and 2 Cooling Water 2014 MSPI Data Error, August 18, 2014
- CAP 1217274 (ECE), Event 1 D5 Diesel Generator Trip, Revision 2
- CAP 1300370 (ECE), Event 2 D6 Overspeed Protection Trip and Locked Out, Revision 2
- CAP 1363570 (ECE), Event 3 D6 Radiator Fan 2 Motor Trip, Revision 3
- CAP 1449090, Insufficient Engineering Technical Rigor, October 2, 2014
- CAP 1449088, Untimely Past Operability Assessment, October 2, 2014
- CAP 1449086, Process Weaknesses Between Past Operability Evaluations and Failure Reporting, October 2, 2014
- CAP 1449089, Untimely Performance of Past Operability Evaluation for the December 2012 D6 Trip, October 2, 2014
- OPR 1392583, Perform a Review for Non-Conforming Condition in AR 1363570, August 6, 2013
- H6.3, GE Thermal Overload Heater Sizing for NON-MOV MOTORS, Revision 4
- FP-E-MSPI-01, Mitigating System Performance Index (MSPI), Revision 5
- FP-OP-OL-01, Operability/ Functionality Determination, Revision 13
- Prairie Island MSPI Basis Document, Revision 10
- CAP 1445316, ENG-ME-662 Didn't Account for Rad Fan Motor Upper Temp Limit, September 3, 2014
- CAP 1445211, Inconsistencies Noted in SP 2093, September 3, 2014
- CAP 1445123, Supervisor WO Closeout Less than Adequate, September 2, 2014
- CAP 1444649, Potential Failure to Identify Extent of Condition for ACE1363570, August 27, 2014
- CAP 1444426, EFR Wording and Alignment Deficiencies, August 6, 2014
- CAP 1444414, EFR Closed as Indeterminate - New Actions and CAP Delayed, August 26, 2014
- FP-OP-COO-18, Log Keeping, Revision 1
- SWI CON-1, Cable Installation and Testing, Revision 6
- EM 4.3.1-C.7, Electrical Construction Standards Cables, Revision 1
- WO 422020-01, Replace 51V/51M/D6 Relay, March 12, 2012
- WO 404687-01, Replace Aging Generating Protective Relay 47H, February 9, 2011
- EC 24506, D5/D6 EDG 95001 Inspection Evaluation, September 8, 2014
- EC 22864, Engineering Evaluation for D5/6 Radiator Fan Motors, Revision 1
- FP-PA-ARP-01, CAP Action Request Process, Revision 39

LIST OF ACRONYMS USED

AC	Alternating Current
ACE	Apparent Cause Evaluation
ADAMS	Agencywide Documents Access and Management System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
ECE	Equipment Cause Evaluation
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
MOLR	Motor Overload Relay
MORT	Management Oversight Risk Tree
MSPI	Mitigating System Performance Indicator
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OE	Operating Experience
OPR	Operability Review
PARS	Publicly Available Records System
PI	Performance Indicator
PINGP	Prairie Island Nuclear Generating Plant
PRA	Probabilistic Risk Assessment
RCE	Root Cause Evaluation
ROP	Reactor Oversight Process
SSFF	Safety System Functional Failure

K. Davison

-2-

actions for each root and contributing cause; the corrective actions appeared to be prioritized commensurate with the safety significance of the issues.

The Emergency AC Power PI returned below the Green-to-White threshold in the second quarter of 2013. In accordance with the guidance in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," Unit 2 was required to remain in the Regulatory Response Column of the ROP Action Matrix until all objectives of the supplemental inspection had been met. Therefore, based upon the results of this inspection, the NRC has determined the performance at the Prairie Island Nuclear Generating Plant, Unit 2 to be in the Licensee Response Column of the ROP Action Matrix as of the date of this letter.

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Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Docket No. 50-306
License No. DPR-60

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Inspection Report 05000306/2014009
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OFFICIAL RECORD COPY

Letter to Kevin Davison from Kenneth Riemer November 18, 2014.

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT 2, NRC
SUPPLEMENTAL INSPECTION REPORT 05000306/2014009 AND
ASSESSMENT FOLLOW-UP LETTER

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